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Bell's Palsy

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Definition

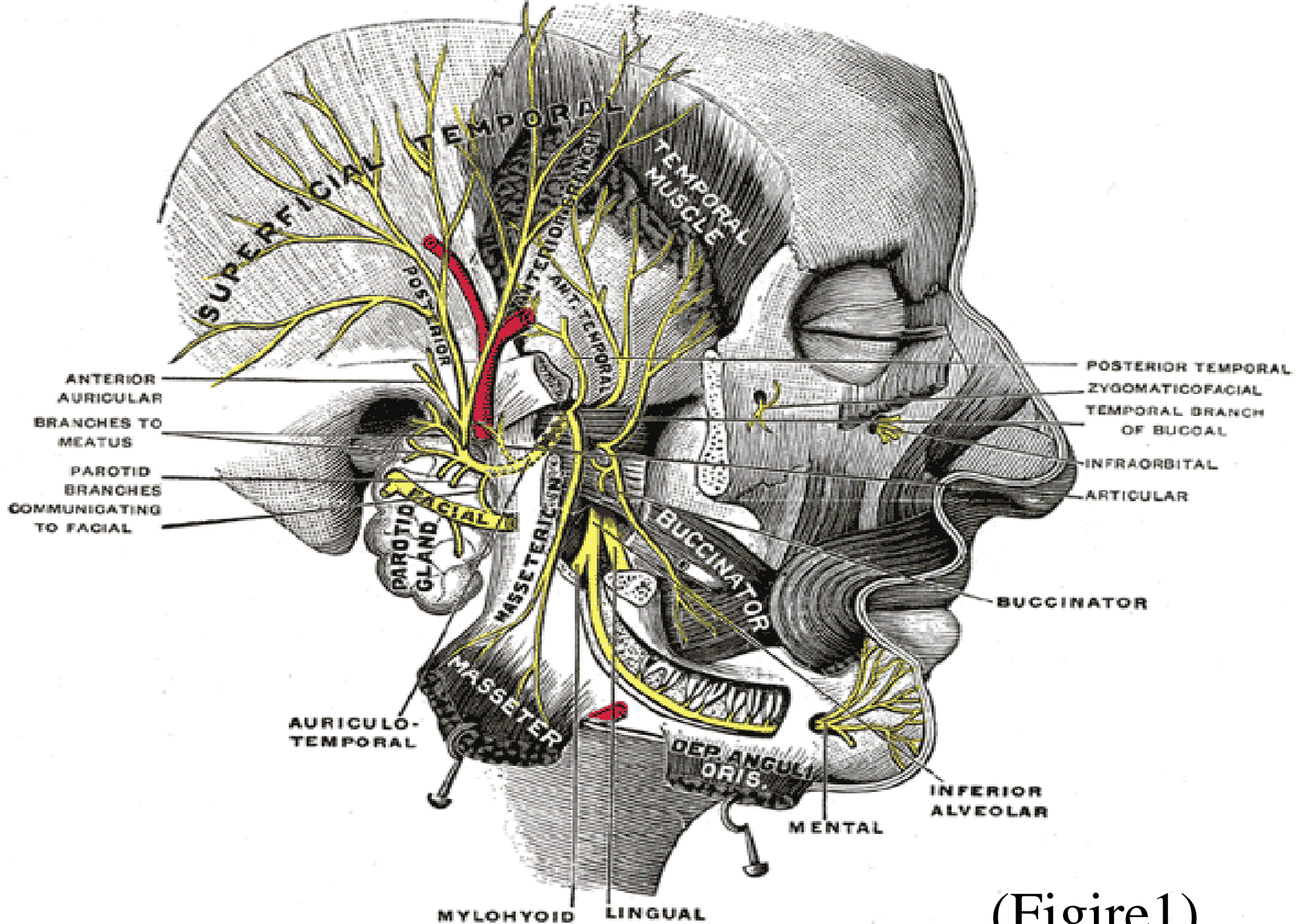
The bell's palsy is defined as a facial paralysis of acute onset attributed to an acute non-supportive inflammation of facial nerve within stylomastoid foramen. It may occur at any age from infancy to old age, but appears to be most common in young adults; males are affected more than female. (Roger, 1984)

Facial nerve anatomy

The 7th cranial nerve is mixed nerve containing both sensory and motor components. It emerges from the brainstem between the pons and the medulla, and controls the muscles of facial expression, and functions in the conveyance of taste sensations from the anterior two-thirds of the tongue and oral cavity. Seventh cranial nerve also supplies preganglionic parasympathetic fibers to several head and neck ganglia.

The motor part of the 7th cranial nerve arises from the facial nerve nucleus in the pons. While the sensory part of the 7th cranial nerve arises from the nervus intermedius. (Figure1)

(Carpenter & Sutin, 1976)



(Figure1)

Causes

1-Trauma: Basal skull fractures, Facial injuries, Penetrating injury to middle ear, Altitude paralysis. (barotrauma), Scuba diving & Lightning.

2-Infection: External otitis, Otitis media & Mastoiditis,,etc)

3-Metabolic: Diabetes mellitus & Hypertension.

4-Neoplastic: Seventh nerve tumor & Benign lesions of parotid.

5-Idiopathic: Familial Bell palsy, Autoimmune syndrome & Multiple sclerosis.(John YS Kim, MD, 1990)

clinical features

- 1-Pain behind ear (mastoid foramen).
- 2- affection of taste and hearing.
- 3-Inability to raise eye brow.
- 4-Inability to close eye on affected side.
- 5-Flattening of nosolabial fold.
- 6-Accumulation of food inside the cheek(affected side).
- 7-Dropping corner of mouth.
- 8-Dripping of saliva. (Weir, Pentland, & Murray, 1993)

Assessment

Tests for bell's palsy include the following:

Muscle test :

1. Forehead wrinkling (frontalis muscle)
2. Eye closure (orbicularis oculi muscle)
3. Wide smile
4. Whistling
5. Blowing (eg, buccinator muscle, orbicularis oris muscle, zygomatic muscle)



(Figure2)

Follow

Voluntary facial movements, such as wrinkling the brow, showing teeth, frowning, closing the eyes tightly (inability to do so is called lagophthalmos), pursing the lips and puffing out the cheeks, all test the facial nerve. There should be no noticeable asymmetry.

In an upper motor neuron lesion, called central seven, only the lower part of the face on the contralateral side will be affected, due to the bilateral control to the upper facial muscles (frontalis and orbicularis oculi).

Follow

Lower motor neuron lesions can result in a 7th cranial nerve palsy (Bell's palsy is the term used to describe the idiopathic form of facial nerve palsy), manifested as both upper and lower facial weakness on the same side of the lesion. (ProdyutDas, 2011)

Treatment

A-medical:

treatment of symptomatic patient with analgesics may be necessary during the early stage if the ear is painful.

1- Corticosteroid:

Guidelines such as prednisone, are powerful anti-inflammatory agents. If they can reduce the swelling of the facial nerve, it will fit more comfortably within the bony corridor that surrounds it. Corticosteroids may work best if they're started within several days of when the patient symptoms started. (Lee, Byun, & Park , 2013)

2- B vitamins:

Many of the B vitamins are essential for proper nervous system functioning. Addition of a basic B-complex vitamin to the daily routine may be a good idea during recovery. Some B's that may be particularly beneficial are B1 – B6 – B12. (Jalaludin, 1995)

Treatment

B-physical therapy:

1- Short wave diathermy (SWD): used in early stage (pulsed which have no thermal effect) might be of benefit in bell's palsy, but there is little evidence to support the athermal theory and the efficacy of pulsed SWD. Therefore the role of SWD in bell's palsy might be controversial. Also heating of facial muscles (which are superficial) prior to exercise, massage or electrical stimulation can be attained by superficial heat therapy, which would have no effect on the inflamed nerve in bony canal.(Figure 3).(Kitchen & Bazin , 1996)



(Figure 3)

Treatment

2- Massage: Effleurae , Circular, Finer & thumb kneading.

Which has frequently been prescribed for facial palsy, improve circulation and may prevent contracture.

Active exercise (in front of a mirror) prevent muscle atrophy and improve muscle function. (Mosforth & Taverner, 1985)

Treatment

3- Electrical stimulation:

Two ways: A- put a one electron on the nerve, and the second electron, on any muscle stimulated want.
(Figure 4).

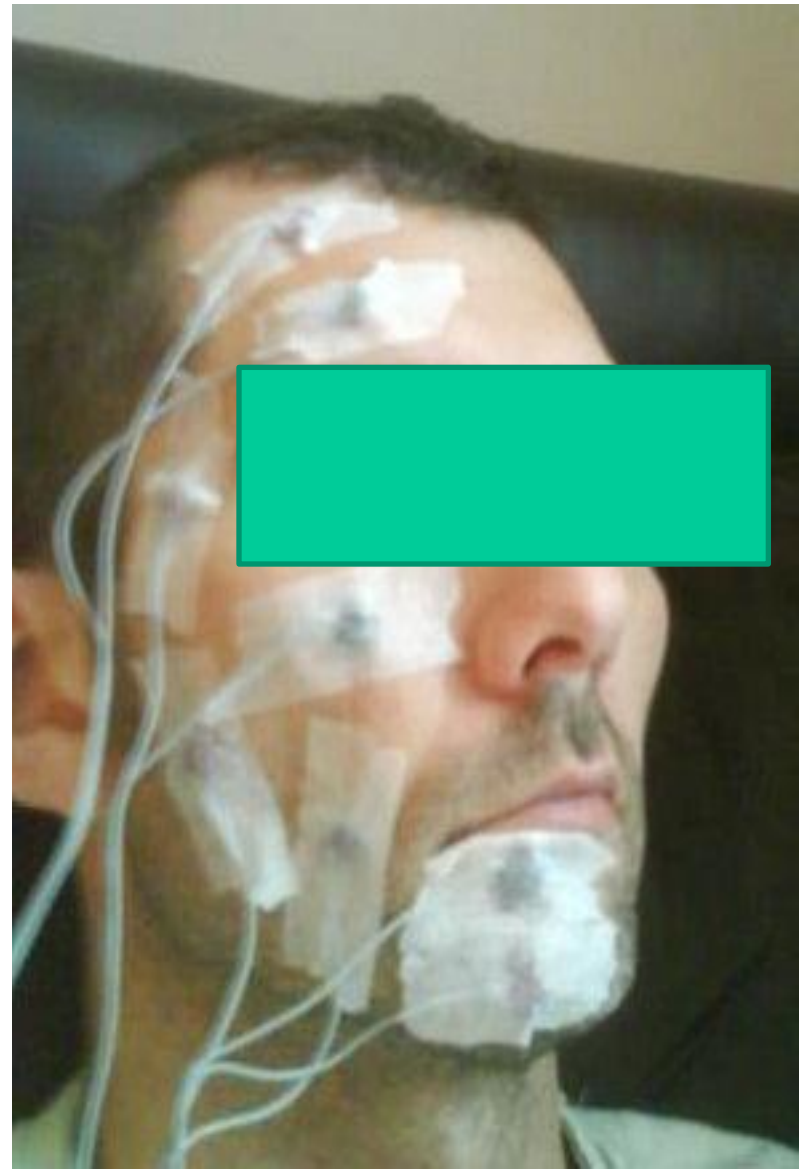
B- Electron put on muscle unaffected, second Electron on the affected muscle.

aims at preserving muscle bulk especially in complete paralysis and it has psychological benefit as the patient observes muscle contraction in his face that gives him hope for recovery from facial paralysis.(Figure 5)

(Mysiow & Jackson, 2000)



(Figure 5)



(Figure 4)

Treatment

4- Therapeutic heat and cold:

Heat: Improve local circulation and lower skin resistance to electrical stimulation.

Cold : Ice stimulation has to be performed to a specific muscle group , to increase the muscles contraction power. (Lehmann, 1990)

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